

1/49

SEQUENCE LISTING

<110> MEMORIAL SLOAN-KETTERING CANCER CENTER

<120> IDENTIFICATION AND CHARACTERIZATION OF MULTIPLE SPLICE
VARIANTS OF THE MU OPIOID RECEPTOR GENE

<130> (51590)62078WO

<140> PCT/US05/04548

<141> 2005-02-11

<150> 60/544,534

<151> 2004-02-13

<160> 89

<170> PatentIn Ver. 3.3

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Cys Glu His Thr Lys Gly
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 tataagattg gaagc 111

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 ccggcttgcg gcaccatcgc ctacggggc 138

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 Gly Ser Ser

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10/49

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1 5 10 15

aag cct tgg cca ctg agc tac aat gca ggg tagtctccat ttcccttccc 98
Lys Pro Trp Pro Leu Ser Tyr Asn Ala Gly
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aggaagagtc tagagcgtaa 118

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<212> PRT
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Lys Pro Trp Pro Leu Ser Tyr Asn Ala Gly 20 25

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<212> PRT
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Val Phe

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11/49

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Val Phe

atttggcagt tatcaagggga cctccagcca agtttggt 142

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<210> 42

<211> 4

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<213> Homo sapiens

<400> 42

Val Arg Ser Leu
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<210> 43

<211> 18

<212> PRT

<213> Homo sapiens

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Lys Ile Asp Leu Phe Gln Lys Ser Ser Leu Leu Asn Cys Glu His Thr
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Lys Gly

<210> 44

<211> 9

<212> PRT

<213> Homo sapiens

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Arg Glu Arg Arg Gln Lys Ser Asp Trp
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12/49

<210> 45
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Gly Pro Pro Ala Lys Phe Val Ala Asp Gln Leu Ala Gly Ser Ser
1 5 10 15

<210> 46
<211> 22
<212> PRT
<213> Homo sapiens

<400> 46
Val Glu Leu Asn Leu Asp Cys His Cys Glu Asn Ala Lys Pro Trp Pro
1 5 10 15

Leu Ser Tyr Asn Ala Gly
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<210> 47
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<212> PRT
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Ser Pro Ser Gly Gly Ala Phe Leu Leu Ser
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Asn Leu Ser His Leu Asp Gly Asn Leu Ser Asp Pro Cys Gly Pro Asn
 35 40 45

Arg Thr Asp Leu Gly Gly Arg Asp Ser Leu Cys Pro Pro Thr Gly Ser
 50 55 60

Pro Ser Met Ile Thr Ala Ile Thr Ile Met Ala Leu Tyr Ser Ile Val
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Cys Val Val Gly Leu Phe Gly Asn Phe Leu Val Met Tyr Val Ile Val
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 Cys Thr Met Ser Val Asp Arg Tyr Ile Ala Val Cys His Pro Val Lys
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 Thr Thr Lys Tyr Arg Gln Gly Ser Ile Asp Cys Thr Leu Thr Phe Ser
 210 215 220
 His Pro Thr Trp Tyr Trp Glu Asn Leu Leu Lys Ile Cys Val Phe Ile
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 260 265 270
 Lys Asp Arg Asn Leu Arg Arg Ile Thr Arg Met Val Leu Val Val Val
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 Ala Val Phe Ile Val Cys Trp Thr Pro Ile His Ile Tyr Val Ile Ile
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 305 310 315 320
 His Phe Cys Ile Ala Leu Gly Tyr Thr Asn Ser Cys Leu Asn Pro Val
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<210> 53
 <211> 397
 <212> PRT
 <213> Homo sapiens

<400> 53

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Pro	Ser	Met	Ile	Thr	Ala	Ile	Thr	Ile	Met	Ala	Leu	Tyr	Ser	Ile	Val	65	70	75	80
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Thr	Thr	Lys	Tyr	Arg	Gln	Gly	Ser	Ile	Asp	Cys	Thr	Leu	Thr	Phe	Ser	210	215	220	
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Met	Ile	Leu	Arg	Leu	Lys	Ser	Val	Arg	Met	Leu	Ser	Gly	Ser	Lys	Glu	260	265	270	
Lys	Asp	Arg	Asn	Leu	Arg	Arg	Ile	Thr	Arg	Met	Val	Leu	Val	Val	Val	275	280	285	
Ala	Val	Phe	Ile	Val	Cys	Trp	Thr	Pro	Ile	His	Ile	Tyr	Val	Ile	Ile	290	295	300	

Lys Ala Leu Val Thr Ile Pro Glu Thr Thr Phe Gln Thr Val Ser Trp
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His Phe Cys Ile Ala Leu Gly Tyr Thr Asn Ser Cys Leu Asn Pro Val
325 330 335

Leu Tyr Ala Phe Leu Asp Glu Asn Phe Lys Arg Cys Phe Arg Glu Phe
340 345 350

Cys Ile Pro Thr Ser Ser Asn Ile Glu Gln Gln Asn Ser Thr Arg Ile
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Arg Gln Asn Thr Arg Asp His Pro Ser Thr Ala Asn Thr Val Asp Arg
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Thr Asn His Gln Arg Glu Arg Arg Gln Lys Ser Asp Trp
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<210> 54

<211> 2483

<212> DNA

<213> Homo sapiens

<400> 54

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<211> 403

<212> PRT

<213> Homo sapiens

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Leu Ala Tyr Ser Ser Cys Ser Pro Ala Pro Ser Pro Gly Ser Trp Val
              20              25              30

Asn Leu Ser His Leu Asp Gly Asn Leu Ser Asp Pro Cys Gly Pro Asn
              35              40              45

Arg Thr Asp Leu Gly Gly Arg Asp Ser Leu Cys Pro Pro Thr Gly Ser
              50              55              60

Pro Ser Met Ile Thr Ala Ile Thr Ile Met Ala Leu Tyr Ser Ile Val
              65              70              75              80

Cys Val Val Gly Leu Phe Gly Asn Phe Leu Val Met Tyr Val Ile Val
              85              90              95

Arg Tyr Thr Lys Met Lys Thr Ala Thr Asn Ile Tyr Ile Phe Asn Leu
              100              105              110

Ala Leu Ala Asp Ala Leu Ala Thr Ser Thr Leu Pro Phe Gln Ser Val
              115              120              125

Asn Tyr Leu Met Gly Thr Trp Pro Phe Gly Thr Ile Leu Cys Lys Ile
              130              135              140

Val Ile Ser Ile Asp Tyr Tyr Asn Met Phe Thr Ser Ile Phe Thr Leu
              145              150              155              160

Cys Thr Met Ser Val Asp Arg Tyr Ile Ala Val Cys His Pro Val Lys
              165              170              175

Ala Leu Asp Phe Arg Thr Pro Arg Asn Ala Lys Ile Ile Asn Val Cys
              180              185              190

Asn Trp Ile Leu Ser Ser Ala Ile Gly Leu Pro Val Met Phe Met Ala
              195              200              205

Thr Thr Lys Tyr Arg Gln Gly Ser Ile Asp Cys Thr Leu Thr Phe Ser
              210              215              220

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His Pro Thr Trp Tyr Trp Glu Asn Leu Leu Lys Ile Cys Val Phe Ile
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 260 265 270
 Lys Asp Arg Asn Leu Arg Arg Ile Thr Arg Met Val Leu Val Val Val
 275 280 285
 Ala Val Phe Ile Val Cys Trp Thr Pro Ile His Ile Tyr Val Ile Ile
 290 295 300
 Lys Ala Leu Val Thr Ile Pro Glu Thr Thr Phe Gln Thr Val Ser Trp
 305 310 315 320
 His Phe Cys Ile Ala Leu Gly Tyr Thr Asn Ser Cys Leu Asn Pro Val
 325 330 335
 Leu Tyr Ala Phe Leu Asp Glu Asn Phe Lys Arg Cys Phe Arg Glu Phe
 340 345 350
 Cys Ile Pro Thr Ser Ser Asn Ile Glu Gln Gln Asn Ser Thr Arg Ile
 355 360 365
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 <211> 1251
 <212> DNA
 <213> Homo sapiens

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 ctcatccaac ctggtactgg gaaaacctgc tgaagatctg tgttttcac ttcgccttca 780
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<210> 57
 <211> 389
 <212> PRT
 <213> Homo sapiens

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Leu Ala Tyr Ser Ser Cys Ser Pro Ala Pro Ser Pro Gly Ser Trp Val
          20          25          30

Asn Leu Ser His Leu Asp Gly Asn Leu Ser Asp Pro Cys Gly Pro Asn
          35          40          45

Arg Thr Asp Leu Gly Gly Arg Asp Ser Leu Cys Pro Pro Thr Gly Ser
          50          55          60

Pro Ser Met Ile Thr Ala Ile Thr Ile Met Ala Leu Tyr Ser Ile Val
          65          70          75          80

Cys Val Val Gly Leu Phe Gly Asn Phe Leu Val Met Tyr Val Ile Val
          85          90          95

Arg Tyr Thr Lys Met Lys Thr Ala Thr Asn Ile Tyr Val Phe Asn Leu
          100          105          110

Ala Leu Ala Asp Ala Leu Ala Thr Ser Thr Leu Pro Phe Gln Ser Val
          115          120          125

Asn Tyr Leu Met Gly Thr Trp Pro Phe Gly Thr Ile Leu Cys Lys Ile
          130          135          140

Val Ile Ser Ile Asp Tyr Tyr Asn Met Phe Thr Ser Ile Phe Thr Leu
          145          150          155          160

Cys Thr Met Ser Val Asp Arg Tyr Ile Ala Val Cys His Pro Val Lys
          165          170          175

Ala Leu Asp Phe Arg Thr Pro Arg Asn Ala Lys Ile Ile Asn Val Cys
          180          185          190

Asn Trp Ile Leu Ser Ser Ala Ile Gly Leu Pro Val Met Phe Met Ala
          195          200          205

Thr Thr Lys Tyr Arg Gln Gly Ser Ile Asp Cys Thr Leu Thr Phe Ser
          210          215          220

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His Pro Thr Trp Tyr Trp Glu Asn Leu Leu Lys Ile Cys Val Phe Ile
 225 230 235 240
 Phe Ala Phe Ile Met Pro Val Leu Ile Ile Thr Val Cys Tyr Gly Leu
 245 250 255
 Met Ile Leu Arg Leu Lys Ser Val Arg Met Leu Ser Gly Ser Lys Glu
 260 265 270
 Lys Asp Arg Asn Leu Arg Arg Ile Thr Arg Met Val Leu Val Val Val
 275 280 285
 Ala Val Phe Ile Val Cys Trp Thr Pro Ile His Ile Tyr Val Ile Ile
 290 295 300
 Lys Ala Leu Val Thr Ile Pro Glu Thr Thr Phe Gln Thr Val Ser Trp
 305 310 315 320
 His Phe Cys Ile Ala Leu Gly Tyr Thr Asn Ser Cys Leu Asn Pro Val
 325 330 335
 Leu Tyr Ala Phe Leu Asp Glu Asn Phe Lys Arg Cys Phe Arg Glu Phe
 340 345 350
 Cys Ile Pro Thr Ser Ser Asn Ile Glu Gln Gln Asn Ser Thr Arg Ile
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<210> 58
 <211> 1402
 <212> DNA
 <213> Homo sapiens

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<210> 59

<211> 410

<212> PRT

<213> Homo sapiens

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Leu Ala Tyr Ser Cys Ser Pro Ala Pro Ser Pro Gly Ser Trp Val
      20              25              30

Asn Leu Ser His Leu Asp Gly Asn Leu Ser Asp Pro Cys Gly Pro Asn
      35              40              45

Arg Thr Asp Leu Gly Gly Arg Asp Ser Leu Cys Pro Pro Thr Gly Ser
      50              55              60

Pro Ser Met Ile Thr Ala Ile Thr Ile Met Ala Leu Tyr Ser Ile Val
      65              70              75              80

Cys Val Val Gly Leu Phe Gly Asn Phe Leu Val Met Tyr Val Ile Val
      85              90              95

Arg Tyr Thr Lys Met Lys Thr Ala Thr Asn Ile Tyr Ile Phe Asn Leu
      100              105              110

Ala Leu Ala Asp Ala Leu Ala Thr Ser Thr Leu Pro Phe Gln Ser Val
      115              120              125

Asn Tyr Leu Met Gly Thr Trp Pro Phe Gly Thr Ile Leu Cys Lys Ile
      130              135              140

Val Ile Ser Ile Asp Tyr Tyr Asn Met Phe Thr Ser Ile Phe Thr Leu
      145              150              155              160

Cys Thr Met Ser Val Asp Arg Tyr Ile Ala Val Cys His Pro Val Lys
      165              170              175

Ala Leu Asp Phe Arg Thr Pro Arg Asn Ala Lys Ile Ile Asn Val Cys
      180              185              190

Asn Trp Ile Leu Ser Ser Ala Ile Gly Leu Pro Val Met Phe Met Ala
      195              200              205

Thr Thr Lys Tyr Arg Gln Gly Ser Ile Asp Cys Thr Leu Thr Phe Ser
      210              215              220

His Pro Thr Trp Tyr Trp Glu Asn Leu Leu Lys Ile Cys Val Phe Ile
      225              230              235              240

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Phe	Ala	Phe	Ile	Met 245	Pro	Val	Leu	Ile	Ile	Thr	Val	Cys	Tyr	Gly	Leu
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Lys	Asp	Arg 275	Asn	Leu	Arg	Arg	Ile 280	Thr	Arg	Met	Val	Leu 285	Val	Val	Val
Ala	Val	Phe	Ile	Val	Cys	Trp 295	Thr	Pro	Ile	His	Ile 300	Tyr	Val	Ile	Ile
Lys 305	Ala	Leu	Val	Thr 310	Ile	Pro	Glu	Thr	Thr	Phe 315	Gln	Thr	Val	Ser	Trp 320
His	Phe	Cys	Ile	Ala 325	Leu	Gly	Tyr	Thr	Asn 330	Ser	Cys	Leu	Asn	Pro 335	Val
Leu	Tyr	Ala	Phe 340	Leu	Asp	Glu	Asn	Phe 345	Lys	Arg	Cys	Phe	Arg 350	Glu	Phe
Cys	Ile	Pro 355	Thr	Ser	Ser	Asn	Ile 360	Glu	Gln	Gln	Asn	Ser 365	Thr	Arg	Ile
Arg	Gln	Asn	Thr	Arg	Asp	His 375	Pro	Ser	Thr	Ala	Asn 380	Thr	Val	Asp	Arg
Thr 385	Asn	His	Gln	Val	Glu 390	Leu	Asn	Leu	Asp	Cys 395	His	Cys	Glu	Asn	Ala 400
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<212> DNA
<213> Homo sapiens
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<210> 61
 <211> 402
 <212> PRT
 <213> Homo sapiens

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<400> 61
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Leu Ala Tyr Ser Ser Cys Ser Pro Ala Pro Ser Pro Gly Ser Trp Val
      20                      25                      30

Asn Leu Ser His Leu Asp Gly Asn Leu Ser Asp Pro Cys Gly Pro Asn
      35                      40                      45

Arg Thr Asp Leu Gly Gly Arg Asp Ser Leu Cys Pro Pro Thr Gly Ser
      50                      55                      60

Pro Ser Met Ile Thr Ala Ile Thr Ile Met Ala Leu Tyr Ser Ile Val
      65                      70                      75                      80

Cys Val Val Gly Leu Phe Gly Asn Phe Leu Val Met Tyr Val Ile Val
      85                      90                      95

Arg Tyr Thr Lys Met Lys Thr Ala Thr Asn Ile Tyr Ile Phe Asn Leu
      100                      105                      110

Ala Leu Ala Asp Ala Leu Ala Thr Ser Thr Leu Pro Phe Gln Ser Val
      115                      120                      125

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Asn	Tyr	Leu	Met	Gly	Thr	Trp	Pro	Phe	Gly	Thr	Ile	Leu	Cys	Lys	Ile	130	135	140
Val	Ile	Ser	Ile	Asp	Tyr	Tyr	Asn	Met	Phe	Thr	Ser	Ile	Phe	Thr	Leu	145	150	155
Cys	Thr	Met	Ser	Val	Asp	Arg	Tyr	Ile	Ala	Val	Cys	His	Pro	Val	Lys	165	170	175
Ala	Leu	Asp	Phe	Arg	Thr	Pro	Arg	Asn	Ala	Lys	Ile	Ile	Asn	Val	Cys	180	185	190
Asn	Trp	Ile	Leu	Ser	Ser	Ala	Ile	Gly	Leu	Pro	Val	Met	Phe	Met	Ala	195	200	205
Thr	Thr	Lys	Tyr	Arg	Gln	Gly	Ser	Ile	Asp	Cys	Thr	Leu	Thr	Phe	Ser	210	215	220
His	Pro	Thr	Trp	Tyr	Trp	Glu	Asn	Leu	Leu	Lys	Ile	Cys	Val	Phe	Ile	225	230	235
Phe	Ala	Phe	Ile	Met	Pro	Val	Leu	Ile	Ile	Thr	Val	Cys	Tyr	Gly	Leu	245	250	255
Met	Ile	Leu	Arg	Leu	Lys	Ser	Val	Arg	Met	Leu	Ser	Gly	Ser	Lys	Glu	260	265	270
Lys	Asp	Arg	Asn	Leu	Arg	Arg	Ile	Thr	Arg	Met	Val	Leu	Val	Val	Val	275	280	285
Ala	Val	Phe	Ile	Val	Cys	Trp	Thr	Pro	Ile	His	Ile	Tyr	Val	Ile	Ile	290	295	300
Lys	Ala	Leu	Val	Thr	Ile	Pro	Glu	Thr	Thr	Phe	Gln	Thr	Val	Ser	Trp	305	310	315
His	Phe	Cys	Ile	Ala	Leu	Gly	Tyr	Thr	Asn	Ser	Cys	Leu	Asn	Pro	Val	325	330	335
Leu	Tyr	Ala	Phe	Leu	Asp	Glu	Asn	Phe	Lys	Arg	Cys	Phe	Arg	Glu	Phe	340	345	350
Cys	Ile	Pro	Thr	Ser	Ser	Asn	Ile	Glu	Gln	Gln	Asn	Ser	Thr	Arg	Ile	355	360	365
Arg	Gln	Asn	Thr	Arg	Asp	His	Pro	Ser	Thr	Ala	Asn	Thr	Val	Asp	Arg	370	375	380
Thr	Asn	His	Gln	Ile	Arg	Asp	Pro	Ile	Ser	Asn	Leu	Pro	Arg	Val	Ser	385	390	395
Val	Phe																	

<210> 62
 <211> 400
 <212> PRT
 <213> Homo sapiens

<400> 62

Met	Asp	Ser	Ser	Ala	Ala	Pro	Thr	Asn	Ala	Ser	Asn	Cys	Thr	Asp	Ala	1	5	10	15
Leu	Ala	Tyr	Ser	Ser	Cys	Ser	Pro	Ala	Pro	Ser	Pro	Gly	Ser	Trp	Val	20	25	30	
Asn	Leu	Ser	His	Leu	Asp	Gly	Asn	Leu	Ser	Asp	Pro	Cys	Gly	Pro	Asn	35	40	45	
Arg	Thr	Asp	Leu	Gly	Gly	Arg	Asp	Ser	Leu	Cys	Pro	Pro	Thr	Gly	Ser	50	55	60	
Pro	Ser	Met	Ile	Thr	Ala	Ile	Thr	Ile	Met	Ala	Leu	Tyr	Ser	Ile	Val	65	70	75	80
Cys	Val	Val	Gly	Leu	Phe	Gly	Asn	Phe	Leu	Val	Met	Tyr	Val	Ile	Val	85	90	95	
Arg	Tyr	Thr	Lys	Met	Lys	Thr	Ala	Thr	Asn	Ile	Tyr	Ile	Phe	Asn	Leu	100	105	110	
Ala	Leu	Ala	Asp	Ala	Leu	Ala	Thr	Ser	Thr	Leu	Pro	Phe	Gln	Ser	Val	115	120	125	
Asn	Tyr	Leu	Met	Gly	Thr	Trp	Pro	Phe	Gly	Thr	Ile	Leu	Cys	Lys	Ile	130	135	140	
Val	Ile	Ser	Ile	Asp	Tyr	Tyr	Asn	Met	Phe	Thr	Ser	Ile	Phe	Thr	Leu	145	150	155	160
Cys	Thr	Met	Ser	Val	Asp	Arg	Tyr	Ile	Ala	Val	Cys	His	Pro	Val	Lys	165	170	175	
Ala	Leu	Asp	Phe	Arg	Thr	Pro	Arg	Asn	Ala	Lys	Ile	Ile	Asn	Val	Cys	180	185	190	
Asn	Trp	Ile	Leu	Ser	Ser	Ala	Ile	Gly	Leu	Pro	Val	Met	Phe	Met	Ala	195	200	205	
Thr	Thr	Lys	Tyr	Arg	Gln	Gly	Ser	Ile	Asp	Cys	Thr	Leu	Thr	Phe	Ser	210	215	220	
His	Pro	Thr	Trp	Tyr	Trp	Glu	Asn	Leu	Leu	Lys	Ile	Cys	Val	Phe	Ile	225	230	235	240
Phe	Ala	Phe	Ile	Met	Pro	Val	Leu	Ile	Ile	Thr	Val	Cys	Tyr	Gly	Leu	245	250	255	
Met	Ile	Leu	Arg	Leu	Lys	Ser	Val	Arg	Met	Leu	Ser	Gly	Ser	Lys	Glu	260	265	270	

27/49

Lys Asp Arg Asn Leu Arg Arg Ile Thr Arg Met Val Leu Val Val Val
 275 280 285

Ala Val Phe Ile Val Cys Trp Thr Pro Ile His Ile Tyr Val Ile Ile
 290 295 300

Lys Ala Leu Val Thr Ile Pro Glu Thr Thr Phe Gln Thr Val Ser Trp
 305 310 315 320

His Phe Cys Ile Ala Leu Gly Tyr Thr Asn Ser Cys Leu Asn Pro Val
 325 330 335

Leu Tyr Ala Phe Leu Asp Glu Asn Phe Lys Arg Cys Phe Arg Glu Phe
 340 345 350

Cys Ile Pro Thr Ser Ser Asn Ile Glu Gln Gln Asn Ser Thr Arg Ile
 355 360 365

Arg Gln Asn Thr Arg Asp His Pro Ser Thr Ala Asn Thr Val Asp Arg
 370 375 380

Thr Asn His Gln Leu Glu Asn Leu Glu Ala Glu Thr Ala Pro Leu Pro
 385 390 395 400

<210> 63
 <211> 392
 <212> PRT
 <213> Homo sapiens

<400> 63
 Met Asp Ser Ser Ala Ala Pro Thr Asn Ala Ser Asn Cys Thr Asp Ala
 1 5 10 15

Leu Ala Tyr Ser Ser Cys Ser Pro Ala Pro Ser Pro Gly Ser Trp Val
 20 25 30

Asn Leu Ser His Leu Asp Gly Asn Leu Ser Asp Pro Cys Gly Pro Asn
 35 40 45

Arg Thr Asp Leu Gly Gly Arg Asp Ser Leu Cys Pro Pro Thr Gly Ser
 50 55 60

Pro Ser Met Ile Thr Ala Ile Thr Ile Met Ala Leu Tyr Ser Ile Val
 65 70 75 80

Cys Val Val Gly Leu Phe Gly Asn Phe Leu Val Met Tyr Val Ile Val
 85 90 95

Arg Tyr Thr Lys Met Lys Thr Ala Thr Asn Ile Tyr Ile Phe Asn Leu
 100 105 110

Ala Leu Ala Asp Ala Leu Ala Thr Ser Thr Leu Pro Phe Gln Ser Val
 115 120 125

28/49

Asn	Tyr	Leu	Met	Gly	Thr	Trp	Pro	Phe	Gly	Thr	Ile	Leu	Cys	Lys	Ile
130						135					140				
Val	Ile	Ser	Ile	Asp	Tyr	Tyr	Asn	Met	Phe	Thr	Ser	Ile	Phe	Thr	Leu
145				150						155					160
Cys	Thr	Met	Ser	Val	Asp	Arg	Tyr	Ile	Ala	Val	Cys	His	Pro	Val	Lys
				165					170					175	
Ala	Leu	Asp	Phe	Arg	Thr	Pro	Arg	Asn	Ala	Lys	Ile	Ile	Asn	Val	Cys
			180					185					190		
Asn	Trp	Ile	Leu	Ser	Ser	Ala	Ile	Gly	Leu	Pro	Val	Met	Phe	Met	Ala
	195						200					205			
Thr	Thr	Lys	Tyr	Arg	Gln	Gly	Ser	Ile	Asp	Cys	Thr	Leu	Thr	Phe	Ser
	210					215					220				
His	Pro	Thr	Trp	Tyr	Trp	Glu	Asn	Leu	Leu	Lys	Ile	Cys	Val	Phe	Ile
225					230					235					240
Phe	Ala	Phe	Ile	Met	Pro	Val	Leu	Ile	Ile	Thr	Val	Cys	Tyr	Gly	Leu
				245					250					255	
Met	Ile	Leu	Arg	Leu	Lys	Ser	Val	Arg	Met	Leu	Ser	Gly	Ser	Lys	Glu
			260					265					270		
Lys	Asp	Arg	Asn	Leu	Arg	Arg	Ile	Thr	Arg	Met	Val	Leu	Val	Val	Val
		275					280					285			
Ala	Val	Phe	Ile	Val	Cys	Trp	Thr	Pro	Ile	His	Ile	Tyr	Val	Ile	Ile
	290					295					300				
Lys	Ala	Leu	Val	Thr	Ile	Pro	Glu	Thr	Thr	Phe	Gln	Thr	Val	Ser	Trp
305					310					315					320
His	Phe	Cys	Ile	Ala	Leu	Gly	Tyr	Thr	Asn	Ser	Cys	Leu	Asn	Pro	Val
				325					330					335	
Leu	Tyr	Ala	Phe	Leu	Asp	Glu	Asn	Phe	Lys	Arg	Cys	Phe	Arg	Glu	Phe
			340					345					350		
Cys	Ile	Pro	Thr	Ser	Ser	Asn	Ile	Glu	Gln	Gln	Asn	Ser	Thr	Arg	Ile
		355					360					365			
Arg	Gln	Asn	Thr	Arg	Asp	His	Pro	Ser	Thr	Ala	Asn	Thr	Val	Asp	Arg
	370					375					380				
Thr	Asn	His	Gln	Val	Arg	Ser	Leu								
385					390										

<210> 64
 <211> 418
 <212> PRT
 <213> Homo sapiens

<400> 64

Met	Asp	Ser	Ser	Ala	Ala	Pro	Thr	Asn	Ala	Ser	Asn	Cys	Thr	Asp	Ala	1	5	10	15
Leu	Ala	Tyr	Ser	Ser	Cys	Ser	Pro	Ala	Pro	Ser	Pro	Gly	Ser	Trp	Val	20	25	30	
Asn	Leu	Ser	His	Leu	Asp	Gly	Asn	Leu	Ser	Asp	Pro	Cys	Gly	Pro	Asn	35	40	45	
Arg	Thr	Asp	Leu	Gly	Gly	Arg	Asp	Ser	Leu	Cys	Pro	Pro	Thr	Gly	Ser	50	55	60	
Pro	Ser	Met	Ile	Thr	Ala	Ile	Thr	Ile	Met	Ala	Leu	Tyr	Ser	Ile	Val	65	70	75	80
Cys	Val	Val	Gly	Leu	Phe	Gly	Asn	Phe	Leu	Val	Met	Tyr	Val	Ile	Val	85	90	95	
Arg	Tyr	Thr	Lys	Met	Lys	Thr	Ala	Thr	Asn	Ile	Tyr	Ile	Phe	Asn	Leu	100	105	110	
Ala	Leu	Ala	Asp	Ala	Leu	Ala	Thr	Ser	Thr	Leu	Pro	Phe	Gln	Ser	Val	115	120	125	
Asn	Tyr	Leu	Met	Gly	Thr	Trp	Pro	Phe	Gly	Thr	Ile	Leu	Cys	Lys	Ile	130	135	140	
Val	Ile	Ser	Ile	Asp	Tyr	Tyr	Asn	Met	Phe	Thr	Ser	Ile	Phe	Thr	Leu	145	150	155	160
Cys	Thr	Met	Ser	Val	Asp	Arg	Tyr	Ile	Ala	Val	Cys	His	Pro	Val	Lys	165	170	175	
Ala	Leu	Asp	Phe	Arg	Thr	Pro	Arg	Asn	Ala	Lys	Ile	Ile	Asn	Val	Cys	180	185	190	
Asn	Trp	Ile	Leu	Ser	Ser	Ala	Ile	Gly	Leu	Pro	Val	Met	Phe	Met	Ala	195	200	205	
Thr	Thr	Lys	Tyr	Arg	Gln	Gly	Ser	Ile	Asp	Cys	Thr	Leu	Thr	Phe	Ser	210	215	220	
His	Pro	Thr	Trp	Tyr	Trp	Glu	Asn	Leu	Leu	Lys	Ile	Cys	Val	Phe	Ile	225	230	235	240
Phe	Ala	Phe	Ile	Met	Pro	Val	Leu	Ile	Ile	Thr	Val	Cys	Tyr	Gly	Leu	245	250	255	
Met	Ile	Leu	Arg	Leu	Lys	Ser	Val	Arg	Met	Leu	Ser	Gly	Ser	Lys	Glu	260	265	270	
Lys	Asp	Arg	Asn	Leu	Arg	Arg	Ile	Thr	Arg	Met	Val	Leu	Val	Val	Val	275	280	285	
Ala	Val	Phe	Ile	Val	Cys	Trp	Thr	Pro	Ile	His	Ile	Tyr	Val	Ile	Ile	290	295	300	

Lys Ala Leu Val Thr Ile Pro Glu Thr Thr Phe Gln Thr Val Ser Trp
305 310 315 320

His Phe Cys Ile Ala Leu Gly Tyr Thr Asn Ser Cys Leu Asn Pro Val
325 330 335

Leu Tyr Ala Phe Leu Asp Glu Asn Phe Lys Arg Cys Phe Arg Glu Phe
340 345 350

Cys Ile Pro Thr Ser Ser Asn Ile Glu Gln Gln Asn Ser Thr Arg Ile
355 360 365

Arg Gln Asn Thr Arg Asp His Pro Ser Thr Ala Asn Thr Val Asp Arg
370 375 380

Thr Asn His Gln Pro Pro Leu Ala Val Ser Met Ala Gln Ile Phe Thr
385 390 395 400

Arg Tyr Pro Pro Pro Thr His Arg Glu Lys Thr Cys Asn Asp Tyr Met
405 410 415

Lys Arg

<210> 65

<211> 446

<212> PRT

<213> Homo sapiens

<400> 65

Met Asp Ser Ser Ala Ala Pro Thr Asn Ala Ser Asn Cys Thr Asp Ala
1 5 10 15

Leu Ala Tyr Ser Ser Cys Ser Pro Ala Pro Ser Pro Gly Ser Trp Val
20 25 30

Asn Leu Ser His Leu Asp Gly Asn Leu Ser Asp Pro Cys Gly Pro Asn
35 40 45

Arg Thr Asp Leu Gly Gly Arg Asp Ser Leu Cys Pro Pro Thr Gly Ser
50 55 60

Pro Ser Met Ile Thr Ala Ile Thr Ile Met Ala Leu Tyr Ser Ile Val
65 70 75 80

Cys Val Val Gly Leu Phe Gly Asn Phe Leu Val Met Tyr Val Ile Val
85 90 95

Arg Tyr Thr Lys Met Lys Thr Ala Thr Asn Ile Tyr Ile Phe Asn Leu
100 105 110

Ala Leu Ala Asp Ala Leu Ala Thr Ser Thr Leu Pro Phe Gln Ser Val
115 120 125

Asn Tyr Leu Met Gly Thr Trp Pro Phe Gly Thr Ile Leu Cys Lys Ile
130 135 140

Val Ile Ser Ile Asp Tyr Tyr Asn Met Phe Thr Ser Ile Phe Thr Leu
 145 150 155 160
 Cys Thr Met Ser Val Asp Arg Tyr Ile Ala Val Cys His Pro Val Lys
 165 170 175
 Ala Leu Asp Phe Arg Thr Pro Arg Asn Ala Lys Ile Ile Asn Val Cys
 180 185 190
 Asn Trp Ile Leu Ser Ser Ala Ile Gly Leu Pro Val Met Phe Met Ala
 195 200 205
 Thr Thr Lys Tyr Arg Gln Gly Ser Ile Asp Cys Thr Leu Thr Phe Ser
 210 215 220
 His Pro Thr Trp Tyr Trp Glu Asn Leu Leu Lys Ile Cys Val Phe Ile
 225 230 235 240
 Phe Ala Phe Ile Met Pro Val Leu Ile Ile Thr Val Cys Tyr Gly Leu
 245 250 255
 Met Ile Leu Arg Leu Lys Ser Val Arg Met Leu Ser Gly Ser Lys Glu
 260 265 270
 Lys Asp Arg Asn Leu Arg Arg Ile Thr Arg Met Val Leu Val Val Val
 275 280 285
 Ala Val Phe Ile Val Cys Trp Thr Pro Ile His Ile Tyr Val Ile Ile
 290 295 300
 Lys Ala Leu Val Thr Ile Pro Glu Thr Thr Phe Gln Thr Val Ser Trp
 305 310 315 320
 His Phe Cys Ile Ala Leu Gly Tyr Thr Asn Ser Cys Leu Asn Pro Val
 325 330 335
 Leu Tyr Ala Phe Leu Asp Glu Asn Phe Lys Arg Cys Phe Arg Glu Phe
 340 345 350
 Cys Ile Pro Thr Ser Ser Asn Ile Glu Gln Gln Asn Ser Thr Arg Ile
 355 360 365
 Arg Gln Asn Thr Arg Asp His Pro Ser Thr Ala Asn Thr Val Asp Arg
 370 375 380
 Thr Asn His Gln Cys Leu Pro Ile Pro Ser Leu Ser Cys Trp Ala Leu
 385 390 395 400
 Glu His Gly Cys Leu Val Val Tyr Pro Gly Pro Leu Gln Gly Pro Leu
 405 410 415
 Val Arg Tyr Asp Leu Pro Ala Ile Leu His Ser Ser Cys Leu Arg Gly
 420 425 430
 Asn Thr Ala Pro Ser Pro Ser Gly Gly Ala Phe Leu Leu Ser
 435 440 445

<210> 66

<211> 388

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
consensus sequence

<400> 66

Met	Asp	Ser	Ser	Ala	Ala	Pro	Thr	Asn	Ala	Ser	Asn	Cys	Thr	Asp	Ala	1	5	10	15
Leu	Ala	Tyr	Ser	Ser	Cys	Ser	Pro	Ala	Pro	Ser	Pro	Gly	Ser	Trp	Val	20	25	30	
Asn	Leu	Ser	His	Leu	Asp	Gly	Asn	Leu	Ser	Asp	Pro	Cys	Gly	Pro	Asn	35	40	45	
Arg	Thr	Asp	Leu	Gly	Gly	Arg	Asp	Ser	Leu	Cys	Pro	Pro	Thr	Gly	Ser	50	55	60	
Pro	Ser	Met	Ile	Thr	Ala	Ile	Thr	Ile	Met	Ala	Leu	Tyr	Ser	Ile	Val	65	70	75	80
Cys	Val	Val	Gly	Leu	Phe	Gly	Asn	Phe	Leu	Val	Met	Tyr	Val	Ile	Val	85	90	95	
Arg	Tyr	Thr	Lys	Met	Lys	Thr	Ala	Thr	Asn	Ile	Tyr	Ile	Phe	Asn	Leu	100	105	110	
Ala	Leu	Ala	Asp	Ala	Leu	Ala	Thr	Ser	Thr	Leu	Pro	Phe	Gln	Ser	Val	115	120	125	
Asn	Tyr	Leu	Met	Gly	Thr	Trp	Pro	Phe	Gly	Thr	Ile	Leu	Cys	Lys	Ile	130	135	140	
Val	Ile	Ser	Ile	Asp	Tyr	Tyr	Asn	Met	Phe	Thr	Ser	Ile	Phe	Thr	Leu	145	150	155	160
Cys	Thr	Met	Ser	Val	Asp	Arg	Tyr	Ile	Ala	Val	Cys	His	Pro	Val	Lys	165	170	175	
Ala	Leu	Asp	Phe	Arg	Thr	Pro	Arg	Asn	Ala	Lys	Ile	Ile	Asn	Val	Cys	180	185	190	
Asn	Trp	Ile	Leu	Ser	Ser	Ala	Ile	Gly	Leu	Pro	Val	Met	Phe	Met	Ala	195	200	205	
Thr	Thr	Lys	Tyr	Arg	Gln	Gly	Ser	Ile	Asp	Cys	Thr	Leu	Thr	Phe	Ser	210	215	220	
His	Pro	Thr	Trp	Tyr	Trp	Glu	Asn	Leu	Leu	Lys	Ile	Cys	Val	Phe	Ile	225	230	235	240
Phe	Ala	Phe	Ile	Met	Pro	Val	Leu	Ile	Ile	Thr	Val	Cys	Tyr	Gly	Leu	245	250	255	

33/49

Met Ile Leu Arg Leu Lys Ser Val Arg Met Leu Ser Gly Ser Lys Glu
260 265 270
Lys Asp Arg Asn Leu Arg Arg Ile Thr Arg Met Val Leu Val Val Val
275 280 285
Ala Val Phe Ile Val Cys Trp Thr Pro Ile His Ile Tyr Val Ile Ile
290 295 300
Lys Ala Leu Val Thr Ile Pro Glu Thr Thr Phe Gln Thr Val Ser Trp
305 310 315 320
His Phe Cys Ile Ala Leu Gly Tyr Thr Asn Ser Cys Leu Asn Pro Val
325 330 335
Leu Tyr Ala Phe Leu Asp Glu Asn Phe Lys Arg Cys Phe Arg Glu Phe
340 345 350
Cys Ile Pro Thr Ser Ser Asn Ile Glu Gln Gln Asn Ser Thr Arg Ile
355 360 365
Arg Gln Asn Thr Arg Asp His Pro Ser Thr Ala Asn Thr Val Asp Arg
370 375 380
Thr Asn His Gln
385

<210> 67
<211> 7
<212> PRT
<213> Rattus norvegicus

<400> 67
Asn His Gln Val Cys Ala Phe
1 5

<210> 68
<211> 111
<212> DNA
<213> Rattus norvegicus

<220>
<221> CDS
<222> (1)..(21)

<400> 68
aac cac cag gta tgt gct ttc tagaattacg gataacatat aaaaatacca 51
Asn His Gln Val Cys Ala Phe
1 5

tatctggtac cagtctaaga tttaaattctt taagaagggtc agtaacttga ggcaaagtcc 111

<210> 69
 <211> 246
 <212> DNA
 <213> Rattus norvegicus

<220>
 <221> CDS
 <222> (1)..(204)

<400> 69
 aac cac cag cca gcc ctg gca gtc agc gtg gcc cag atc ttt aca gga 48
 Asn His Gln Pro Ala Leu Ala Val Ser Val Ala Gln Ile Phe Thr Gly
 1 5 10 15
 tat cct tct ccg act cat ggt gaa aaa ccc tgc aag agt tac agg gac 96
 Tyr Pro Ser Pro Thr His Gly Glu Lys Pro Cys Lys Ser Tyr Arg Asp
 20 25 30
 aga cct aga ccc tgt gga aga acg tgg tct ttg aaa tcg cgt gca gaa 144
 Arg Pro Arg Pro Cys Gly Arg Thr Trp Ser Leu Lys Ser Arg Ala Glu
 35 40 45
 tcc aat gtg gag cac ttc cat tgt gga gcc gca tta atc tat aac aat 192
 Ser Asn Val Glu His Phe His Cys Gly Ala Ala Leu Ile Tyr Asn Asn
 50 55 60
 gtg aat ttc atc taaacacagg gatgtgctag tgagaagttt ggaggtgcag gc 246
 Val Asn Phe Ile
 65

<210> 70
 <211> 68
 <212> PRT
 <213> Rattus norvegicus

<400> 70
 Asn His Gln Pro Ala Leu Ala Val Ser Val Ala Gln Ile Phe Thr Gly
 1 5 10 15
 Tyr Pro Ser Pro Thr His Gly Glu Lys Pro Cys Lys Ser Tyr Arg Asp
 20 25 30
 Arg Pro Arg Pro Cys Gly Arg Thr Trp Ser Leu Lys Ser Arg Ala Glu
 35 40 45
 Ser Asn Val Glu His Phe His Cys Gly Ala Ala Leu Ile Tyr Asn Asn
 50 55 60
 Val Asn Phe Ile
 65

<210> 71
 <211> 293
 <212> DNA
 <213> Rattus norvegicus

<220>
 <221> CDS
 <222> (1)..(255)

<400> 71
 aac cac cag cca gcc ctg gca gtc agc gtg gcc cag atc ttt aca gga 48
 Asn His Gln Pro Ala Leu Ala Val Ser Val Ala Gln Ile Phe Thr Gly
 1 5 10 15
 tat cct tct ccg act cat ggt gaa aaa ccc tgc aag agt tac agg gac 96
 Tyr Pro Ser Pro Thr His Gly Glu Lys Pro Cys Lys Ser Tyr Arg Asp
 20 25 30
 aga cct aga ccc tgt gga aga acg tgg tct ttg aaa tcg cgt gca gaa 144
 Arg Pro Arg Pro Cys Gly Arg Thr Trp Ser Leu Lys Ser Arg Ala Glu
 35 40 45
 tcc aat gtg gag cac ttc cat tgt gga gcc gca tta atc tat aac aat 192
 Ser Asn Val Glu His Phe His Cys Gly Ala Ala Leu Ile Tyr Asn Asn
 50 55 60
 gaa cta aaa ata ggg cca gtg tcc tgg ctc cag atg cct gcg cac gtg 240
 Glu Leu Lys Ile Gly Pro Val Ser Trp Leu Gln Met Pro Ala His Val
 65 70 75 80
 ctc gtg cgc ccc tgg taatgaacac gggctccgat tctgaatatc cttctgtg 293
 Leu Val Arg Pro Trp
 85

<210> 72
 <211> 85
 <212> PRT
 <213> Rattus norvegicus

<400> 72
 Asn His Gln Pro Ala Leu Ala Val Ser Val Ala Gln Ile Phe Thr Gly
 1 5 10 15
 Tyr Pro Ser Pro Thr His Gly Glu Lys Pro Cys Lys Ser Tyr Arg Asp
 20 25 30
 Arg Pro Arg Pro Cys Gly Arg Thr Trp Ser Leu Lys Ser Arg Ala Glu
 35 40 45
 Ser Asn Val Glu His Phe His Cys Gly Ala Ala Leu Ile Tyr Asn Asn
 50 55 60
 Glu Leu Lys Ile Gly Pro Val Ser Trp Leu Gln Met Pro Ala His Val
 65 70 75 80
 Leu Val Arg Pro Trp
 85

<210> 73
 <211> 4
 <212> PRT
 <213> Rattus norvegicus

<400> 73
 Asn His Gln Thr
 1

<210> 74
 <211> 204
 <212> DNA
 <213> Rattus norvegicus

<220>
 <221> CDS
 <222> (1)..(12)

<400> 74
 aac cac cag acc tagaccctgt ggaagaacgt ggtctttgaa atcgcggtgca 52
 Asn His Gln Thr
 1

gaatccaatg tggagcactt ccattgtgga gccgcattaa tctataacaa tgaactaaaa 112
 atagggccag tgtcctggct ccagatgcct gcgcacgtgc tcgtgcgccc ctggtaatga 172
 acacgggctc cgattctgaa tatccttctg tg- 204

<210> 75
 <211> 10
 <212> PRT
 <213> Rattus norvegicus

<400> 75
 Asn His Gln Glu Pro Gln Ser Val Glu Thr
 1 5 10

<210> 76
 <211> 438
 <212> DNA
 <213> Rattus norvegicus

<220>
 <221> CDS
 <222> (1)..(30)

<400> 76
 aac cac cag gag cct cag tca gta gag aca tgatgtgaat gaaccaactg 50
 Asn His Gln Glu Pro Gln Ser Val Glu Thr
 1 5 10

attaacaag gttttctgaa cactgaaata caacacaaat gtagaggta ctagagaaaa 110
 tttgtagcct gaaaattcaa ttacggaaac caaatgagtg tgagtgtata cattttaagg 170
 cctcagagag attttatttc atgactaaca acatgaccca aagcacctaa actgtggtga 230
 ttagattaca aagacaattc tagagcctgg gactaaagaa atgtagccc tcacacagac 290
 aggcctcaca cttcagtaat ggaatgagca aattagatta gtgagaaaga tggaggaaag 350
 actcgaaata ttttcatatc ttctgtgga actccacaag aaaaccaata gaataaacca 410
 acctgctgga cccttggtgg ctcttacc 438

<210> 77
 <211> 7
 <212> PRT
 <213> Rattus norvegicus

<400> 77
 Asn His Gln Gly Ala Glu Leu
 1 5

<210> 78
 <211> 891
 <212> DNA
 <213> Rattus norvegicus

<220>
 <221> CDS
 <222> (1)..(21)

<400> 78
 aac cac cag gga gca gag tta tgaggattaa tacaaaaaga ctaccacgtc 51
 Asn His Gln Gly Ala Glu Leu
 1 5

cttcagagga gcagccagag ggaggccctt ggccccaca atggtaggtg ctcccacttg 111
 ctgtctcccc atcacacatc tctcactggt ccctttgttt tcagctatgg ctaccgggca 171
 tagcctttat tcagtcttct tgactgacct cagatttatg caatacaacc tagatggatc 231
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<210> 79

<211> 1628

<212> DNA

<213> *Rattus norvegicus*

<400> 79

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<210> 80

<211> 394

<212> PRT

<213> *Rattus norvegicus*

<400> 80

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Val	Gly	Leu	Phe	Gly	Asn	Phe	Leu	Val	Met	Tyr	Val	Ile	Val	Arg	Tyr
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Thr	Lys	Met	Lys	Thr	Ala	Thr	Asn	Ile	Tyr	Ile	Phe	Asn	Leu	Ala	Leu
			100					105					110		
Ala	Asp	Ala	Leu	Ala	Thr	Ser	Thr	Leu	Pro	Phe	Gln	Ser	Val	Asn	Tyr
		115					120					125			
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	130					135					140				
Ser	Ile	Asp	Tyr	Tyr	Asn	Met	Phe	Thr	Ser	Ile	Phe	Thr	Leu	Cys	Thr
	145				150					155					160
Met	Ser	Val	Asp	Arg	Tyr	Ile	Ala	Val	Cys	His	Pro	Val	Lys	Ala	Leu
				165					170					175	
Asp	Phe	Arg	Thr	Pro	Arg	Asn	Ala	Lys	Ile	Val	Asn	Val	Cys	Asn	Trp
			180					185						190	
Ile	Leu	Ser	Ser	Ala	Ile	Gly	Leu	Pro	Val	Met	Phe	Met	Ala	Thr	Thr
	195						200					205			
Lys	Tyr	Arg	Gln	Gly	Ser	Ile	Asp	Cys	Thr	Leu	Thr	Phe	Ser	His	Pro
	210					215					220				
Thr	Trp	Tyr	Trp	Glu	Asn	Leu	Leu	Lys	Ile	Cys	Val	Phe	Ile	Phe	Ala
	225				230					235					240
Phe	Ile	Met	Pro	Val	Leu	Ile	Ile	Thr	Val	Cys	Tyr	Gly	Leu	Met	Ile
				245					250					255	
Leu	Arg	Leu	Lys	Ser	Val	Arg	Met	Leu	Ser	Gly	Ser	Lys	Glu	Lys	Asp
		260						265					270		
Arg	Asn	Leu	Arg	Arg	Ile	Thr	Arg	Met	Val	Leu	Val	Val	Val	Ala	Val
		275					280						285		
Phe	Ile	Val	Cys	Trp	Thr	Pro	Ile	His	Ile	Tyr	Val	Ile	Ile	Lys	Ala
	290					295					300				

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 Cys Ile Ala Leu Gly Tyr Thr Asn Ser Cys Leu Asn Pro Val Leu Leu
 325 330 335
 Arg Leu Pro Gly Met Lys Thr Ser Ser Asp Ala Ser Glu Glu Phe Cys
 340 345 350
 Ile Pro Thr Ser Ser Thr Ile Glu Gln Gln Asn Ser Thr Arg Val Arg
 355 360 365
 Gln Asn Thr Arg Glu His Pro Ser Thr Ala Asn Thr Val Asp Arg Thr
 370 375 380
 Asn His Gln Glu Pro Gln Ser Val Glu Thr
 385 390

<210> 81
 <211> 1433
 <212> DNA
 <213> Rattus norvegicus

<400> 81
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<210> 82
 <211> 451
 <212> PRT
 <213> Rattus norvegicus

<400> 82

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			20					25					30		
Ser	His	Val	Asp	Gly	Asn	Gln	Ser	Asp	Pro	Cys	Gly	Leu	Asn	Arg	Thr
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Gly	Leu	Gly	Gly	Asn	Asp	Ser	Leu	Cys	Pro	Gln	Thr	Gly	Ser	Pro	Ser
	50					55					60				
Met	Val	Thr	Ala	Ile	Thr	Ile	Met	Ala	Leu	Tyr	Ser	Ile	Val	Cys	Val
	65				70					75					80
Val	Gly	Leu	Phe	Gly	Asn	Phe	Leu	Val	Met	Tyr	Val	Ile	Val	Arg	Tyr
				85					90					95	
Thr	Lys	Met	Lys	Thr	Ala	Thr	Asn	Ile	Tyr	Ile	Phe	Asn	Leu	Ala	Leu
			100					105					110		
Ala	Asp	Ala	Leu	Ala	Thr	Ser	Thr	Leu	Pro	Phe	Gln	Ser	Val	Asn	Tyr
		115					120					125			
Leu	Met	Gly	Thr	Trp	Pro	Phe	Gly	Thr	Ile	Leu	Cys	Lys	Ile	Val	Ile
	130					135					140				
Ser	Ile	Asp	Tyr	Tyr	Asn	Met	Phe	Thr	Ser	Ile	Phe	Thr	Leu	Cys	Thr
	145				150					155					160
Met	Ser	Val	Asp	Arg	Tyr	Ile	Ala	Val	Cys	His	Pro	Val	Lys	Ala	Leu
				165					170					175	
Asp	Phe	Arg	Thr	Pro	Arg	Asn	Ala	Lys	Ile	Val	Asn	Val	Cys	Asn	Trp
			180					185					190		
Ile	Leu	Ser	Ser	Ala	Ile	Gly	Leu	Pro	Val	Met	Phe	Met	Ala	Thr	Thr
		195					200					205			
Lys	Tyr	Arg	Gln	Gly	Ser	Ile	Asp	Cys	Thr	Leu	Thr	Phe	Ser	His	Pro
	210					215					220				
Thr	Trp	Tyr	Trp	Glu	Asn	Leu	Leu	Lys	Ile	Cys	Val	Phe	Ile	Phe	Ala
	225				230					235					240
Phe	Ile	Met	Pro	Val	Leu	Ile	Ile	Thr	Val	Cys	Tyr	Gly	Leu	Met	Ile
				245					250					255	
Leu	Arg	Leu	Lys	Ser	Val	Arg	Met	Leu	Ser	Gly	Ser	Lys	Glu	Lys	Asp
			260					265					270		
Arg	Asn	Leu	Arg	Arg	Ile	Thr	Arg	Met	Val	Leu	Val	Val	Val	Ala	Val
		275					280						285		
Phe	Ile	Val	Cys	Trp	Thr	Pro	Ile	His	Ile	Tyr	Val	Ile	Ile	Lys	Ala
	290					295					300				

Leu Ile Thr Ile Pro Glu Thr Thr Phe Gln Thr Val Ser Trp His Phe
 305 310 315 320
 Cys Ile Ala Leu Gly Tyr Thr Asn Ser Cys Leu Asn Pro Val Leu Tyr
 325 330 335
 Ala Phe Leu Asp Glu Asn Phe Lys Arg Cys Phe Arg Glu Phe Cys Ile
 340 345 350
 Pro Thr Ser Ser Thr Ile Glu Gln Gln Asn Ser Thr Arg Val Arg Gln
 355 360 365
 Asn Thr Arg Glu His Pro Ser Thr Ala Asn Thr Val Asp Arg Thr Asn
 370 375 380
 His Gln Pro Ala Leu Ala Val Ser Val Ala Gln Ile Phe Thr Gly Tyr
 385 390 395 400
 Pro Ser Pro Thr His Gly Glu Lys Pro Cys Lys Ser Tyr Arg Asp Arg
 405 410 415
 Pro Arg Pro Cys Gly Arg Thr Trp Ser Leu Lys Ser Arg Ala Glu Ser
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 Asn Phe Ile
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<210> 83
 <211> 1480
 <212> DNA
 <213> Rattus norvegicus

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<210> 84

<211> 468

<212> PRT

<213> Rattus norvegicus

<400> 84

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Ser	His	Val	Asp	Gly	Asn	Gln	Ser	Asp	Pro	Cys	Gly	Leu	Asn	Arg	Thr	35	40	45	
Gly	Leu	Gly	Gly	Asn	Asp	Ser	Leu	Cys	Pro	Gln	Thr	Gly	Ser	Pro	Ser	50	55	60	
Met	Val	Thr	Ala	Ile	Thr	Ile	Met	Ala	Leu	Tyr	Ser	Ile	Val	Cys	Val	65	70	75	80
Val	Gly	Leu	Phe	Gly	Asn	Phe	Leu	Val	Met	Tyr	Val	Ile	Val	Arg	Tyr	85	90	95	
Thr	Lys	Met	Lys	Thr	Ala	Thr	Asn	Ile	Tyr	Ile	Phe	Asn	Leu	Ala	Leu	100	105	110	
Ala	Asp	Ala	Leu	Ala	Thr	Ser	Thr	Leu	Pro	Phe	Gln	Ser	Val	Asn	Tyr	115	120	125	
Leu	Met	Gly	Thr	Trp	Pro	Phe	Gly	Thr	Ile	Leu	Cys	Lys	Ile	Val	Ile	130	135	140	
Ser	Ile	Asp	Tyr	Tyr	Asn	Met	Phe	Thr	Ser	Ile	Phe	Thr	Leu	Cys	Thr	145	150	155	160
Met	Ser	Val	Asp	Arg	Tyr	Ile	Ala	Val	Cys	His	Pro	Val	Lys	Ala	Leu	165	170	175	
Asp	Phe	Arg	Thr	Pro	Arg	Asn	Ala	Lys	Ile	Val	Asn	Val	Cys	Asn	Trp	180	185	190	
Ile	Leu	Ser	Ser	Ala	Ile	Gly	Leu	Pro	Val	Met	Phe	Met	Ala	Thr	Thr	195	200	205	
Lys	Tyr	Arg	Gln	Gly	Ser	Ile	Asp	Cys	Thr	Leu	Thr	Phe	Ser	His	Pro	210	215	220	
Thr	Trp	Tyr	Trp	Glu	Asn	Leu	Leu	Lys	Ile	Cys	Val	Phe	Ile	Phe	Ala	225	230	235	240

Phe	Ile	Met	Pro	Val	Leu	Ile	Ile	Thr	Val	Cys	Tyr	Gly	Leu	Met	Ile	
				245					250					255		
Leu	Arg	Leu	Lys	Ser	Val	Arg	Met	Leu	Ser	Gly	Ser	Lys	Glu	Lys	Asp	
				260					265					270		
Arg	Asn	Leu	Arg	Arg	Ile	Thr	Arg	Met	Val	Leu	Val	Val	Val	Ala	Val	
				275					280					285		
Phe	Ile	Val	Cys	Trp	Thr	Pro	Ile	His	Ile	Tyr	Val	Ile	Ile	Lys	Ala	
				290					295					300		
Leu	Ile	Thr	Ile	Pro	Glu	Thr	Thr	Phe	Gln	Thr	Val	Ser	Trp	His	Phe	
				305					310					315		
Cys	Ile	Ala	Leu	Gly	Tyr	Thr	Asn	Ser	Cys	Leu	Asn	Pro	Val	Leu	Tyr	
				325					330					335		
Ala	Phe	Leu	Asp	Glu	Asn	Phe	Lys	Arg	Cys	Phe	Arg	Glu	Phe	Cys	Ile	
				340					345					350		
Pro	Thr	Ser	Ser	Thr	Ile	Glu	Gln	Gln	Asn	Ser	Thr	Arg	Val	Arg	Gln	
				355					360					365		
Asn	Thr	Arg	Glu	His	Pro	Ser	Thr	Ala	Asn	Thr	Val	Asp	Arg	Thr	Asn	
				370					375					380		
His	Gln	Pro	Ala	Leu	Ala	Val	Ser	Val	Ala	Gln	Ile	Phe	Thr	Gly	Tyr	
				385					390					395		
Pro	Ser	Pro	Thr	His	Gly	Glu	Lys	Pro	Cys	Lys	Ser	Tyr	Arg	Asp	Arg	
				405					410					415		
Pro	Arg	Pro	Cys	Gly	Arg	Thr	Trp	Ser	Leu	Lys	Ser	Arg	Ala	Glu	Ser	
				420					425					430		
Asn	Val	Glu	His	Phe	His	Cys	Gly	Ala	Ala	Leu	Ile	Tyr	Asn	Asn	Glu	
				435					440					445		
Leu	Lys	Ile	Gly	Pro	Val	Ser	Trp	Leu	Gln	Met	Pro	Ala	His	Val	Leu	
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<210> 85
<211> 1385
<212> DNA
<213> Rattus norvegicus
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<210> 86

<211> 387

<212> PRT

<213> Rattus norvegicus

<400> 86

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Leu Ala Gln Ala Ser Cys Ser Pro Ala Pro Gly Ser Trp Leu Asn Leu
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Ser His Val Asp Gly Asn Gln Ser Asp Pro Cys Gly Leu Asn Arg Thr
      35              40              45

Gly Leu Gly Gly Asn Asp Ser Leu Cys Pro Gln Thr Gly Ser Pro Ser
      50              55              60

Met Val Thr Ala Ile Thr Ile Met Ala Leu Tyr Ser Ile Val Cys Val
      65              70              75              80

Val Gly Leu Phe Gly Asn Phe Leu Val Met Tyr Val Ile Val Arg Tyr
      85              90              95

Thr Lys Met Lys Thr Ala Thr Asn Ile Tyr Ile Phe Asn Leu Ala Leu
      100             105             110

Ala Asp Ala Leu Ala Thr Ser Thr Leu Pro Phe Gln Ser Val Asn Tyr
      115             120             125

Leu Met Gly Thr Trp Pro Phe Gly Thr Ile Leu Cys Lys Ile Val Ile
      130             135             140

Ser Ile Asp Tyr Tyr Asn Met Phe Thr Ser Ile Phe Thr Leu Cys Thr
      145             150             155             160

Met Ser Val Asp Arg Tyr Ile Ala Val Cys His Pro Val Lys Ala Leu
      165             170             175

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Asp Phe Arg Thr Pro Arg Asn Ala Lys Ile Val Asn Val Cys Asn Trp
 180 185 190
 Ile Leu Ser Ser Ala Ile Gly Leu Pro Val Met Phe Met Ala Thr Thr
 195 200 205
 Lys Tyr Arg Gln Gly Ser Ile Asp Cys Thr Leu Thr Phe Ser His Pro
 210 215 220
 Thr Trp Tyr Trp Glu Asn Leu Leu Lys Ile Cys Val Phe Val Phe Ala
 225 230 235 240
 Phe Ile Met Pro Val Leu Ile Ile Thr Val Cys Tyr Gly Leu Met Ile
 245 250 255
 Leu Arg Leu Lys Ser Val Arg Met Leu Ser Gly Ser Lys Glu Lys Asp
 260 265 270
 Arg Asn Leu Arg Arg Ile Thr Arg Met Val Leu Val Val Val Ala Val
 275 280 285
 Phe Ile Val Cys Trp Thr Pro Ile His Ile Tyr Val Ile Ile Lys Ala
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 Leu Ile Thr Ile Pro Glu Thr Thr Phe Gln Thr Val Ser Trp His Phe
 305 310 315 320
 Cys Ile Ala Leu Gly Tyr Thr Asn Ser Cys Leu Asn Pro Val Leu Tyr
 325 330 335
 Ala Phe Leu Asp Glu Asn Phe Lys Arg Cys Phe Arg Glu Phe Cys Ile
 340 345 350
 Pro Thr Ser Ser Thr Ile Glu Gln Gln Asn Ser Thr Arg Val Arg Gln
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 Asn Thr Arg Glu His Pro Ser Thr Ala Asn Thr Val Asp Arg Thr Asn
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 His Gln Thr
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<210> 87

<211> 2078

<212> DNA

<213> Rattus norvegicus

<400> 87

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<210> 88

<211> 390

<212> PRT

<213> Rattus norvegicus

<400> 88

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Met Asp Ser Ser Thr Gly Pro Gly Asn Thr Ser Asp Cys Ser Asp Pro
 1              5              10              15

Leu Ala Gln Ala Ser Cys Ser Pro Ala Pro Gly Ser Trp Leu Asn Leu
      20              25              30

Ser His Val Asp Gly Asn Gln Ser Asp Pro Cys Gly Leu Asn Arg Thr
      35              40              45

Gly Leu Gly Gly Asn Asp Ser Leu Cys Pro Gln Thr Gly Ser Pro Ser
 50              55              60

Met Val Thr Ala Ile Thr Ile Met Ala Leu Tyr Ser Ile Val Cys Val
 65              70              75              80

Val Gly Leu Phe Gly Asn Phe Leu Val Met Tyr Val Ile Val Arg Tyr
      85              90              95

Thr Lys Met Lys Thr Ala Thr Asn Ile Tyr Ile Phe Asn Leu Ala Leu
      100              105              110

Ala Asp Ala Leu Ala Thr Ser Thr Leu Pro Phe Gln Ser Val Asn Tyr
      115              120              125

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Leu Met Gly Thr Trp Pro Phe Gly Thr Ile Leu Cys Lys Ile Val Ile
 130 135 140
 Ser Ile Asp Tyr Tyr Asn Met Phe Thr Ser Ile Phe Thr Leu Cys Thr
 145 150 155 160
 Met Ser Val Asp Arg Tyr Ile Ala Val Cys His Pro Val Lys Ala Leu
 165 170 175
 Asp Phe Arg Thr Pro Arg Asn Ala Lys Ile Val Asn Val Cys Asn Trp
 180 185 190
 Ile Leu Ser Ser Ala Ile Gly Leu Pro Val Met Phe Met Ala Thr Thr
 195 200 205
 Lys Tyr Arg Gln Gly Ser Ile Asp Cys Thr Leu Thr Phe Ser His Pro
 210 215 220
 Thr Trp Tyr Trp Glu Asn Leu Leu Lys Ile Cys Val Phe Ile Phe Ala
 225 230 235 240
 Phe Ile Met Pro Val Leu Ile Ile Thr Val Cys Tyr Gly Leu Met Ile
 245 250 255
 Leu Arg Leu Lys Ser Val Arg Met Leu Ser Gly Ser Lys Glu Lys Asp
 260 265 270
 Arg Asn Leu Arg Gly Ile Thr Arg Met Val Leu Val Val Val Ala Val
 275 280 285
 Phe Ile Val Cys Trp Thr Pro Ile His Ile Tyr Val Ile Ile Lys Ala
 290 295 300
 Leu Ile Thr Ile Pro Glu Thr Thr Phe Gln Thr Val Ser Trp His Phe
 305 310 315 320
 Cys Ile Ala Leu Gly Tyr Thr Asn Ser Cys Leu Asn Pro Val Leu Tyr
 325 330 335
 Ala Phe Leu Asp Glu Asn Phe Lys Arg Cys Phe Arg Glu Phe Cys Ile
 340 345 350
 Pro Thr Ser Ser Thr Ile Glu Gln Gln Asn Ser Thr Arg Val Arg Gln
 355 360 365
 Asn Thr Arg Glu His Pro Ser Thr Ala Asn Thr Val Asp Arg Thr Asn
 370 375 380
 His Gln Gly Ala Glu Leu
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<210> 89

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
peptide linker

<400> 89

Gly	Gly	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser
1				5					10					15